



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Norman H. Bangerter
Governor

Dee C. Hansen
Executive Director

Dianne R. Nielson, Ph.D.
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

August 24, 1990

Mr. Bryan Johnson
Environmental Specialist
Hecla Mining Company
6500 Mineral Drive
Box C-8000
Coeur d'Alene, Idaho 83814-1931

Dear Mr. Johnson;

Re: Tailing Impoundment Reclamation, Escalante Mine, Hecla Mining Company,
M/021/004, Iron County, Utah

This letter is in response to your latest submittal received June 18, 1990, concerning the final reclamation proposal for the Escalante Unit tailings facility. This submittal, is an amendment to the tailings pond reclamation plan submitted on September 5, 1990. To summarize the intent of your letter, you have proposed to eliminate the rinse procedure and alter the design of the cover to be applied to the tailings.

The Division has previously explained our position regarding the rinsing and neutralization of the tailings material. Hecla will need to work out final decommissioning details with the Bureau of Water Pollution Control (BWPC) and whether a Ground Water Discharge Permit will be necessary. This letter addresses only the design and nature of the materials proposed to be placed on top of the tailings.

Hecla is now proposing to apply an 8-inch clay cap over the tailings, then apply a 6-inch layer of subsoil, to be followed by 4 inches of stockpiled topsoil. This proposal is not entirely satisfactory to the Division. This leaves only 10 inches of effective plant growth medium to support an arid zone grass-shrub plant community. The clay cap or anything below it cannot be included as a viable rooting medium.

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The Division will require that the planting medium be no less than 24 inches in depth. This medium can be composed of topsoil, subsoil, and waste rock. Material typically designated as B horizon or C horizon can be used to meet this requirement, especially in the case where A horizon material is not available.

We suggest that you apply 20 inches of subsoil and waste rock over the clay cap, then cover this with your remaining 4 to 6 inches of stored topsoil material. This planting depth may still be too shallow to support larger species (shrubs), but should be adequate for grasses and forbs.

The rationale for requiring a deeper rooting medium is to allow for more effective water storage in the soil profile, which is of critical importance in such a dry area. Plant survival will be dependent upon the ability to access moisture in the soil during periods of drought. Such moisture can be maintained in a soil medium 2 feet in depth, much more efficiently than in one that has less than a foot of depth.

A sub-climax community of grasses, though different from the surrounding vegetative community, would be acceptable, as long as it is persistent. A community dominated by shrubs would not be desirable because of the danger of eventually compromising the integrity of the clay liner through root penetration. Establishment of a viable vegetative community over these tailings is essential in limiting moisture access to the tailings. This is accomplished in two ways: (1) water moisture is inhibited from reaching the clay cap and tailings, and (2) the clay cap is protected from processes of natural degradation.

We have attached a letter from the Division of Wildlife Resources, which addresses the soil and planting questions at your site. It is also supportive of a deeper planting medium than what Hecla has proposed. They also offer a suggestion for possible acquisition of additional topsoil material.

The Bureau of Land Management is justifiably concerned about the creation of another disturbed area on public lands, if additional material is to be borrowed for the tailing pond reclamation. Any plan to borrow material would have to involve the reclamation of such sites used for the borrow material.

We look forward to discussing these comments with you during the upcoming meeting scheduled for August 30, 1990, at 9:30 AM in the Division offices. Thank you for

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your patience and continued cooperation in working to attain an acceptable solution to this reclamation problem.

Sincerely,

A handwritten signature in cursive script that reads "D. Wayne Hedberg". The signature is fluid and extends to the right with a long, sweeping underline.

D. Wayne Hedberg
Permit Supervisor,
Minerals Program

jb
cc: Doug Bauer, BLM
Paul Carter, BLM
Fred Pehrson, BWPC
Lowell Braxton
Minerals Staff
MNM021004.2